Quality Control

											DQA	: Date:	•
NCR: Y	'es	/ No				WORK ORDER NON-	100	NFORM	MANCE / UP	DATE		<del></del>	
		,									QA Closed	: Date:	
Mork Orde			_			DISPOSITION				AGAINST DE	PARTMENT	r/PROCESS	
Work Orde	21.					Rework	1		Skid-tube	Crosstube	1	Water Jet	Engineering
Davit 8	اما					I —	1		Machining	Small Fab	Dre	od. Eng. Coor.	Quality
Part N	10.					Scrap Use-as-is	1		noforming	Finishing	-1	ore/Packaging	Other
NCR N	ia					Work Order Update	+ 1		Large Fab	Composite	Nec/sic	Supplier	
NCK I	10.					Work Order opdate	_ [		raige rab	Composite	J	Supplie:	
Root					Descri	iption of work order update	T	Initial	Act	ion	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	nief Eng	Descr	iption	Date	Verification	QC Inspector
Doc/Data							T						
Equip/Tooling			1	]									1
Operator				Ì							Ì		1
Material													:
Setup					]								
Other													[
Process			1		ļ				}				•
Supplier							1						
Training													
Unapproved								<u> </u>					
						F	AUL	T CATE	GORY				
Landi	ng (	Gear				General		_			_		_
		Bending				Bend		Grain		[	Ovalized		Pressure/Forced
		Centre No	ot Concei	ntric to	o/s	BOM/Route		Hardwa	re		Over/Unde	r tolerance	Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	ion Incomplete		Part Incorre	ect	Weld
		Crushed/	Crimped			Burrs		Instruct	ions Incomplete/U	Jnclear	Part Lost/M	lissing	Wrong Stock Pulled

Maintenance

Out of Calibration
Out of Sequence

Outside Dimensions

Mislabeled

Misread

Offset

Contamination

Countersink

Cut Too Short

Drill Holes

Drawing

Finish

Folio

Part Moved

Positioned Wrong

Power Loss/Surge

Other

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Cuffs

Heat Treat

Inspection Strip in Tube

Torque Waves in Extrusion

Work Ord April-11-13 2::		701		Page 2						
Item ID: D2975 Revision ID: Item Name: Wearshoc				Accept	*N90004	*N900040100*				*NS1* *NS2*
Start Date: Required Date Reference:	4/16/13 : 4/16/13	Start Qty: 10.00 Req'd Qty: 10.00	*10* *10*		Cust Item ID: Customer:					
Approvals:		an:	Date:	_	1			Run	Start Stop	*NR1* *NR2*
Sequence ID/ Work Center I 130 *120* Brake NC Brake NC	ID	Operation Description  NC BRAKE  Memo Deburr if nea	cessaryForm as per dwg t)2	Set Up/ Run Hours 0.00 0.00 975 using DT8261 & D		ool# Plan Code	Accept Qty	Qty		Reject Insp. Number Stamp
140 *140* QC Quality Control		QC5- Inspect part comple  Memo	eteness to step on W/O	0.00	7,		B_			
150 *150* Large Fab Large Fab		Weld per dwg A/R Hard Large Fab Memo	dcoat S.S. Batch: <u>M/2</u> (	6063 → 0.00	20596		<u> </u>	_5	NQ.	

NCR: Y	NCR: Yes / No WORK ORDER NON-CONFORMANCE / UPDATE												
											QA Closed:	Da	te:
Work Orde	· • ·					DISPOSITION				AGAINST DI	EPARTMENT,	PROCESS	
WOIK OIGE	-					Rework	۱ ۱	Skid-tube Crosstube			7	Water Jet	Engineering
Part N	10.					Scrap	]	ı	Machining	Small Fab	Pro	d. Eng. Coor.	Quality
						Use-as-is	]		noforming	Finishing	Rec/Stor	e/Packaging	
NCR N	۱o. <sub>-</sub>	- · · ·	·		<del></del>	Work Order Update	<u>ן</u>		Large Fab	Composite	_	Supplier	
Root	i			<u> </u>	Descri	ption of work order update	T	Initial	Ac	tion	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	ief Eng	Desc	ription	Date	Verification	n QC Inspector
Doc/Data							1						•
Equip/Tooling	Ш									•			
Operator	Ш											•	
Material	Ш		[										
Setup	$\square$				1								
Other													
Process	-												
Supplier	Н			* '-									
Training	Н						٠,	: در چ					
Unapproved	Ш	-		<u> </u>	l .		AUL	T CATE	GORY			<u>.                                    </u>	
Landi	ng G	iear				General	-	•					
,	$\Box$	Bending				Bend		Grain			Ovalized		Pressure/Forced
	П	Centre No	ot Concer	ntric to	o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
	П	Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorred	:t	Weld
	Crushed/Crimped Burrs				Burrs		Instruct	ions Incomplete/	Unclear	Part Lost/Mi	ssing	Wrong Stock Pulled	
		Cuffs				Contamination	Maintenance				Part Moved		
		Heat Trea	it			Countersink		Mislabe	led		Positioned V	Vrong	_
		Inspection	n Strip in	Tube		Cut Too Short	Misread				Power Loss/	Surge	Other
Ripples in Bend Drill Holes						Offset							
		Torque W	/aves in E	xtrusio	n	Drawing		Out of 0	Calibration				

Out of Sequence

Outside Dimensions

DQA:

Date:

Turning Sequence

Wave/Twist in Tube

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde April-11-13 2:5		701		*997	<b>01</b> *			Page 3
Item ID: Revision ID: Item Name: Start Date:	D2975 Wearshoe 4/16/13	Start Qty: 10.00	*10*	Accept	*N900040	า1กก*	Setup Start Stop	*NS1* *NS2*
Required Date:		Req'd Qty: 10.00	*10*		Customer:			1
Approvals:		an:	Date:		Date:		Run Start Stop	"NRT"
Sequence ID/ Work Center II 160 *160* QC Quality Control	D	Operation Description QC9- Inspect visual per C	QSI004- Fusion Welds	Set Up/ Run Hours 0.00	Tool ID Tool	Code Qty	Qty	Reject Insp. Number Stamp
170 *170* HandFinish Hand Finishing		Memo Coat entire to A/R Rockg	op concave surface with a uard batch: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	0.00 0.00 layer or rockguard as per o	iwg		3	13-8-14
180 *180* QC Quality Control		QC3- Inspect Part Finish  Memo		0.00		_ <i>1</i> 3		( DAS 05 13.08.15

		,	
NCR:	Yes	1	No

DQA: \_\_\_\_ Date: \_\_\_\_\_

NCR: Y	es / No				WURK ORDER NON-	CONFOR	VIAINCE / UP	DATE	QA Closed:	Date			
Work Orde	<u>-</u>		• •	<u>-</u> .	DISPOSITION		AGAINST DEPARTMENT/PROCESS						
Part N					Rework Scrap	_	Skid-tube Machining	Crosstube Small Fab	4	Water Jet d. Eng. Coor.	Engineering Quality		
NCR N	o		· <u> </u>		Use-as-is Work Order Update	_ Therr	noforming Large Fab	Finishing Composite					
Root				Descri	iption of work order update	Initial							
Cause	Date	Step	Qty		or Non-conformance	Chief Eng	Desci	ription	Date	Verification	QC Inspector		
Doc/Data iquip/Tooling	_												
Operator	┥								1				
Material	1	ļ											
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Other () Process													
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Inapproved		<u> </u>			<u></u>		<u> </u>		<u> </u>		<u>L</u>		
	_					AULT CATE	GORY						
Landin	g Gear			_	General	<u> </u>		<del></del>	1	_	٦. ،		
_	Bending				Bend	Grain		<u> </u>	Ovalized		Pressure/Forced		
-	Centre N	ot Conce	ntric to (	<sup>D/S</sup>  -	BOM/Route	Hardwa		<u> -</u> -	Over/Under	<b>—</b>	Temperature/Cure		
-	Cracks	<i>l</i> o		H	Broken/Damaged	<del></del>	ion incomplete	landon.	Part Incorred	<u> </u>	Weld Wrong Stock Pulled		
-	Crushed/Crimped Burrs				<b>⊢</b> —	tions Incomplete/I enance	Uliclear	Part Lost/Mi Part Moved	122111B	Twiting stock runed			
-	Cuffs Contamination Heat Treat Countersink					Mislab		_	Positioned V	Vrong			
-	Inspection		Tube	<u> </u>	Cut Too Short	Misrea			Power Loss/	-	Other		
}	Ripples in		·ubc	 	Drill Holes	Offset	<del>-</del>	<u>L</u>	]				
}		Vaves in E	Extrusion	,	Drawing	$\vdash$	Calibration	•			<del></del>		
		Sequence		F	Finish	$\vdash$	Sequence						
	Wave/Tv				Folio	<del></del>	e Dimensions						

Work Orde April-11-13 2:5		701	_	*997				Page 4	
Revision ID: Item Name:	D2975 Wearshoe 4/16/13 4/16/13	Start Qty: 10.00 Req'd Qty: 10.00	*10* *10*	Accept	*N900040  Cust Item ID: Customer:	100*	s Set	sup Start Stop	14.21
Reference:							Ru	n Start	***
Approvals:	Process Pla	n:			Date:	- <del></del>	,	Stop	"IVIK"
Sequence ID/ Work Center II 190 *190*	)	Operation Description Identify as per dwg & Sto	ck Location: 5750	Set Up/ Run Hours 0.00	Tool ID Tool #	Code (	Qty	Qty	Reject Insp. Number Stamp
Packaging Packaging		Memo		0.00	,		10 p	y	1 / / / / / / /
<sup>200</sup> *200*		QC21- Final Inspection -	Work Order Release	0.00				191	8/20 9
QC Quality Control		Memo		0.00		_			- 12-08-16

NCR:	Yes	/	No
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											DQA:	Date	:
NCR: Y	'es	/ No				WORK ORDER NO	N-COI	VFORM	MANCE / UPDATE	ı	QA Closed:	Date	·
		<del></del>		<del></del>		<del></del>			<u> </u>			<del></del>	·
Work Orde	٠,					DISPOSITION			AGAINST	T DEF	ARTMENT	/PROCESS	
	•					Rework	$\Box$	Skid-tube Crosstube Water Jet Enginee					
Part N	lo.					Scrap	ļΠļ	ſ	Machining Small Fat	b	Pro	d. Eng. Coor.	Quality
	•			·		Use-as-is	s 🗌	Thern	noforming Finishing	g	Rec/Stor	re/Packaging	Other
NCR N	lo.					Work Order Update	֡֡֜֝֜֜֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֓֓֓֡		Large Fab Composite	e		Supplier	
	_			<del></del>	Dess	wination of words and an analysis		nitial	Action		Sign &	_	<del></del>
Root Cause	١	Date	Step	Qty	Desc	ription of work order updat or Non-conformance		ief Eng	Description		Date	Verification	QC Inspector
Doc/Data	$\dashv$	Date	Step	Qiy		or non-comormance		ici ciig	Везеприон	<u> </u>		-	
quip/Tooling	$\exists$									- 1			
Operator	$\dashv$												
Material	$\dashv$		Ì							Į			*
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Other	一						1	•		l		i	
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upplier	$\sqcap$									1	'		
raining								:		ł	5		
Inapproved	$\Box$		ļ										
							FAUL	T CATE	GORY				
Landi	ng G	iear		•		General		_			-		_
		Bending				Bend		Grain			Ovalized		Pressure/Forced
		Centre No	ot Conce	ntric to	o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	on incomplete		Part Incorred	ct	Weld
		Crushed/	Crimped			Burrs		Instruct	ions Incomplete/Unclear		Part Lost/Mi	ssing	Wrong Stock Pulled
		Cuffs Contamination					Mainte	nance		Part Moved			
		Heat Treat Countersink					Mislabe	led		Positioned V	Vrong	_	
:		Inspection Strip in Tube Cut Too Short					Misread	1		Power Loss/	Surge	Other	
•	Ripples in Bend Drill Holes					Drill Holes		Offset					
	Torque Waves in Extrusion Drawing						Out of Calibration						
	Turning Sequence Finish							Out of Sequence					
	Wave/Twist in Tube Folio							Outside Dimensions					

Work Order ID:	PM					· ·						Page
	99701					: <del>- :</del> ·						
	D2975								rt Date: 4/16/1	3	•	ate: 4/16/13
Parent Item Name:	Wearshoe							Sta	art Qty: 10.00		Required (	Qty: 10.00
	IPP: C02.10.23R IPP Rev:D Now o REV.B DD VERF	on Waterjet 06-1	1-21 JL	М	IPP RE	V:E 13.04.08	AS PER D	WG				
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seg ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Statu Issued
M304S20GA 304/316 :040 Sheet		Purchased	No			100	sf	367.659 <del>0</del>	7 0.2758	2.9031 2.59	58	W/Ac
04/316.063 Shee	<del>:</del> t			Location		Loc Oty	<u>Lo</u>	c Code				*
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DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:	Yes	1	No
11011.	163	,	110

## **WORK ORDER NON-CONFORMANCE / UPDATE**

NCK: YO	es / 140				WORK ORDER NOIS-N	CONFOR	INTRIVEL / OF	DAIL	QA Closed:	Date	:			
Work Orde	r·				DISPOSITION			AGAINST DE	T DEPARTMENT/PROCESS					
WOIK OIGE	·				Rework	]	Skid-tube	Crosstube	]	Water Jet	Engineering			
Part N	o				Scrap	]	Machining	Small Fab		d. Eng. Coor.	Quality			
NCR N	o				Use-as-is Work Order Update	Ther	moforming Large Fab	Finishing Composite	Rec/Sto	re/Packaging Supplier	Other			
Root				Descri	ption of work order update	Initial	Ac	tion	Sign &					
Cause	Date	Step	Qty		or Non-conformance	Chief En	g Desc	ription	Date	Verification	QC Inspector			
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Unapproved		<u> </u>	<u> </u>							<u> </u>	_1			
		_ <del>.</del>			<del></del>	AULT CAT	EGORY		·	<del></del>	<del></del>			
Landin	_			_	General	Па ·		<del></del>	Ovalized	r-	Pressure/Forced			
ļ.	Bending	_		. <u>.</u>	Bend	Grain		<b> </b>	4	<u></u>	┥ ' '			
ŀ	Centre N	ot Concei	ntric to O	<sup>1/5</sup>	BOM/Route	Hardw			Over/Under	<del> </del>	Temperature/Cure Weld			
}-	Cracks				Broken/Damaged	<u> </u>	tion Incomplete	/! !!	Part Incorre	<b>├</b>				
	Crushed/	Crimped		<b> </b>	Burrs	$\vdash$	ctions Incomplete/	/Unclear	Part Lost/M	issing	Wrong Stock Pulled			
	Cuffs			<b>⊢</b>	Contamination	<del>  -  </del>	tenance	<u> </u> -	Part Moved					
}	Heat Treat Countersink						peled	<b></b>	Positioned V		Other			
}	Inspection Strip in Tube Cut Too Short					Misre		L.	Power Loss/	ourge	Totilet			
}	Ripples in Bend Drill Holes						Offset							
}	Torque V			-	Drawing	<b>-</b>	Calibration							
	Turning S			$\vdash$	Finish	Out of Sequence								
1	Wave/Tu	vist in Tul	he	ı	lFolio	i lOutsid	le Dimensions							

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DART AEROSPACE LTD	Work Order:	99701	
Description: Wearplate	Part Number:	D2975	
Inspection Dwg: D2975 Rev: A B A		Page 1 of 1	

## FIRST ARTICLE INSPECTION CHECKLIST

X	First Article		Prototype
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Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.220 x 0.300	+/-0.010	. 22 Ix 301	-		V	JKm-01
2.141	+/-0.010	2.141	-	i i	V	
2.891	+/-0.010	2.891	1		V	
0.375	+/-0.010	.375	-		V	
12.000	+/-0.010	12.000			Τ.	JKM-06
1.240	+/-0.010	1,240	_		V	•
R0.06	+/-0.030	. 60ء			RG	
R0.13	+/-0.030	.13	-		RG	
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Measured by:	Ac	Audited by:	09	Prototype Approval:	N/A
Date:	13.08.01	Date:	13-04-01	Date:	N/A

Rev	Date	Change	Revised by	Approved
Α	07.01.17	New Issue	KJ/JLM	

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